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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/593,509	09/20/2006	Mark Francis Rumreich	PU040040	1389
24498 7590 08/06/2008				
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EXAMINER				
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ART UNIT		PAPER NUMBER		
2628				
MAIL DATE		DELIVERY MODE		
08/06/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/593,509

Applicant(s)

RUMREICH, MARK FRANCIS

Examiner

MEGAN B. GENTLE

Art Unit

2628

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-12 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on 20 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/5508)
Paper No(s)/Mail Date 20 Sept 2006
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Cole et al (U.S. Patent 7,098,936).

Regarding claim 1, Cole et al teaches a method for reducing distortion in images provided by a display system employing Spatial Light Modulating elements comprising steps of providing a set of pixel values corresponding to pixels of an image to be displayed wherein the number of pixel values comprising said set is greater than the number of available SLM elements (Col. 4, line 51 – 52), adjusting at least some of said pixel values to provide a set of adjusted pixel values (Col. 4, line 64 - 67), generating at least a first set of pixels and a second set of pixels from said set of adjusted pixel values, displaying said image as a matrix of pixels comprising said first set of pixels and said second set of pixels, wherein the number of pixels of said matrix is greater than the number of said SLM elements, and wherein at least one of the pixels of said first set

Art Unit: 2628

overlaps at least one of the pixels of said second set (Col. 5, line 10 – 15), wherein said adjusting step is carried by adjusting pixel values of said set of pixel values to compensate for image distortion due to overlapping pixels of said matrix (Col. 1, line 50 – 57).

Regarding claim 9, Cole et al teaches a system employing an array of Spatial Light Modulating elements to display video images comprising a source of video image data comprising at least one set of pixel values corresponding to pixels of an image to be displayed wherein the number of pixel values in said set is greater than the number of SLM elements comprising said array (Col. 4, line 51 – 52), a filter coupled to said source to receive said at least one set of pixel values, said filter configured to adjust at least one pixel value in said set to provide an adjusted set of pixel values (Col. 4, line 38 – 40), a pixel group generator coupled to said filter to receive said adjusted set of pixel values said pixel group generator providing at least a first group of pixels and a second group of pixels based upon said adjusted set of pixel values (Col. 4, line 62 – 64), said SLM elements cooperating with said pixel group generator to display said image as a matrix of pixels comprising said first group of pixels and said second group of pixels wherein at least one of the pixels of said first group overlaps at least one of the pixels of said second group in said matrix (Col. 5, line 10 – 15), wherein said filter is configured to adjust pixel values of overlapping pixels to compensate for image distortion due to said overlapping pixels (Col. 1, line 50 – 57).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2 - 4, 6 and 10 - 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cole et al (U.S. Patent 7098,936) in view of Platt et al (U.S. Patent 6,973,210).

Regarding claim 2, Cole et al does not teach the method wherein said set of pixel values comprises luminance values. However, Platt et al teaches the set of pixel values comprises luminance values for the purpose of selecting a suitable filter relating to luminance and color in a color space (Col. 10, line 35 – 38). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the method where the set of pixel values comprises luminance values for the purpose of selecting a suitable filter relating to luminance and color in a color space.

Regarding claim 3, Cole et al does not teach the method wherein said set of pixel values comprises chrominance values. However, Platt et al teaches the set of pixel values comprises chrominance values for the purpose of selecting a suitable filter relating to luminance and color in a color space (Col. 10, line 35 – 38). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the method where the set of pixel values comprises chrominance values for the purpose of selecting a suitable filter relating to luminance and color in a color space.

Regarding claim 4, Cole et al does not teach the method wherein said adjusting step includes a step of scaling respective pixel values of said set of pixel values in accordance a first scaling factor beta. However, Platt et al teaches adjusting step includes a step of scaling respective pixel values of said set of pixel values in

accordance a first scaling factor beta for the purpose of balancing color and luminance accuracy (Col. 12, line 42 – 44, See Fig. 7). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the method where adjusting step includes a step of scaling respective pixel values of said set of pixel values in accordance a first scaling factor beta for the purpose of balancing color and luminance accuracy.

Regarding claim 6, Cole et al does not teach the method wherein said first scaling factor is adjustable. However, Platt et al teaches said first scaling factor is adjustable for the purpose of balancing color and luminance accuracy (Col. 12, line 44 – 47). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the method where said first scaling factor is adjustable for the purpose of balancing color and luminance accuracy.

Regarding claim 10, Cole et al does not teach the system according to claim 9 wherein said filter includes at least one of first and second scalers for scaling pixel values in accordance with first and second scaling factors. However, Platt et al teaches said filter includes at least one of first and second scalers for scaling pixel values in accordance with first and second scaling factors for the purpose of choosing a suitable filter for balancing color and luminance accuracy (Col. 10, line 38 – 43 and Col. 12, line 41 – 43). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the system where said filter includes at least one of first and second scalers for scaling pixel values in accordance with first and second scaling

factors for the purpose of choosing a suitable filter for balancing color and luminance accuracy

Regarding claim 11, Cole et al does not teach the system according wherein at least one of said first and second scaling factors is adjustable. However, Platt et al teaches at least one of said first and second scaling factors is adjustable for the purpose of balancing color and luminance accuracy (Col. 12, line 44 – 47). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the system where at least one of said first and second scaling factors is adjustable for the purpose of balancing color and luminance accuracy

5. Claims 5, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cole et al (U.S. Patent 7,098,936) in view of Platt et al (U.S. Patent 6,973,210), and further in view of Damera-Venkata et al (U.S. Patent 7,190,380)

Regarding claim 5, Platt et al teaches a second scaling factor alpha. The combination as applied to claim 4 does not teach the method wherein said adjusting step further includes steps of summing values of pixels overlapping said respective pixel values and scaling the sum by a second scaling factor alpha. However, Damera-Venkata et al teaches adjusting step further includes steps of summing values of pixels overlapping said respective pixel values and scaling the sum by a second scaling factor alpha for the purpose of eliminating contouring artifacts (Col. 13, line 42 – 45). Therefore, it

would have been obvious to one of ordinary skill in the art at the time of the invention to implement the method where adjusting step further includes steps of summing values of pixels overlapping said respective pixel values and scaling the sum by a second scaling factor alpha for the purpose of eliminating contouring artifacts

Regarding claim 7, Cole et al does not teach the method wherein said second scaling factor is adjustable. However, Platt et al teaches said second scaling factor is adjustable for the purpose of balancing color and luminance accuracy (Col. 12, line 44 – 47). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the method where said second scaling factor is adjustable for the purpose of balancing color and luminance accuracy.

Regarding claim 8, the combination as applied to claim 5 does not explicitly teach the method wherein said first scaling and second scaling factors are related according to the equation: $\beta = 1 + 4\alpha$, in which the sole purpose is to provide a unity DC gain. However, Platt et al teaches that the value of beta and alpha as applied to find a suitable filter are values set by manufacturer or user in order to adjust to individual taste (Col. 12, line 45 – 48) as well as having a unity DC gain. The equation could express any relationship of the scaling factors to the desire of the manufacturer and/or user with the filter expressing a unity DC gain (Col 16, line 10 – 12). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement

Art Unit: 2628

the system where said first scaling and second scaling factors are related according to the equation: $\beta = 1 + 4\alpha$.

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cole et al (U.S. Patent 7,098,936) in view of Damera-Venkata (U.S. Patent 7,301,549).

Regarding claim 12, the combination as applied to claim 9 does not teach the system wherein said pixels comprise diamond shape pixels. However, Damera-Venkata teaches pixels comprise diamond shape pixels for the purpose of a layout in a diamond grid, and therefore, it is possible to compute a resolution specification and also aliasing occurs on less visually sensitive diagonal frequencies (Col. 22, line 20 - 25). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the system where pixels comprise diamond shape pixels for the purpose of a layout in a diamond grid, and therefore, it is possible to compute a resolution specification and also aliasing occurs on less visually sensitive diagonal frequencies.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Venkateswar et al (U.S. Patent 5,490,009), Demetrescu et al (U.S. Patent 6,657,603).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MEGAN B. GENTLE whose telephone number is (571)270-3705. The examiner can normally be reached on Mon-Fri 8:00am-4:00pm est..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Xiao Wu can be reached on (571)272-7761. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MBG

/XIAO M. WU/
Supervisory Patent Examiner, Art Unit 2628